

ETAILED ACTION

Election/Restrictions

Applicant's election of Group I in the reply filed on 8/25/2009 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 20-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/25/2009.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida 6,003,342.

Claim interpretation: Examiner finds that the preamble gives no breath and meaning to the claim because the preamble contradicts the process steps. The process steps forms charged particles, as opposed to the preamble which recites charging particles, which indicates the particles were uncharged and then there is a step (or

steps) which charges them. Examiner also finds that the three steps of the claim have no implicit or explicit order to them.

Looking to figure 23 of Ishida, SiCl₄ and/or the hydrogen is the gaseous reactant supplied to the flame 41. Oxygen is the oxidizing gas also supplied to the flame "in the reactant"; that it is Ishida's oxidizing gas mixed "in" with the with the reactant during the "supplying" to the flame. As to charging the oxidizing gas: col16, lines 11-13 discloses that the "feedstock gas" is positively charged. As per col. 15, lines 61-65 and table 1 (col. 17), the oxygen is a component of the feedstock. And since it flows along the nozzle, one would infer that the oxygen would be charged.

As to the charged particles being formed "immediately", examiner notes that no standard is explained or suggested in the present application. However applicant's figures 1 and 2 show the particles M1 not existing until a location downstream Of the actual mixing region "R" thus indicating a brief period of time is needed for the gaseous reaction products condense to form particles – as is well understood in the art. It is deemed that Ishida's form charged particles "immediately" since they occur with only a brief period of time between.

Alternatively: Since claim 12 recites one "supplying" where the oxidizing gas is supplied "in" the reactant - there being no mention of "to" the reactant. And since line 5 refers to "the oxidizing gas", but line does not use "the" oxidizing gas. And since there supplying of line 6 has no antecedent connection to either of the other supplying steps, examiner finds the scope of the "wherein" clause to be directed to a further supplying step which supplies and additional oxidizing gas. However such is not a necessary

supplying due to the "when" qualifier. Note the gerund form of the explicit steps, "supplying" (line 3), charging (line 4), and supplying (line 5).

That is examiner interprets the last two lines to encompass: "wherein the reactant and the oxidizing gas form charged particles immediately whenever an additional oxidizing gas is supplied to the reactant." Since Ishida has no additional oxidizing gas the claim fails to define over Ishida. In other words the last two lines only further limits those methods which have an third supplying step, it does not further limit methods which only have two – such as Ishida discloses.

Likewise for claim 13, which refers to "the space comprising oxidizing material", however the claims do not set forth a required space or an oxidizing material. Nor is this second charging step explicitly (i.e. charging). Thus Examiner interprets this claim, is if there is a space and if there is an oxidizing material, then there is a second charging step which occurs in a nozzle by which a 3rd gas is conveyed to the space. Since Ishida has no further oxidizing material, it has no space and thus the conditional aspect of the claim is not met.

Claims 14-15: there is no antecedent basis for "the oxidizing gas, whose flow rate is 80 to 300 m/s". Since applicant has not provided antecedent basis for such a gas, it is assumed that it is an optional gas. Thus claims 14-15 fail to define over the Ishida which has no such oxidizing gas. Examiner notes that the specification does not set forth twice charging the same gas - that is the charging of claim 12 in combination with

the charging of claim 15, thus suggestive that claim 15 is intended to encompass a second gas.

Likewise for claims 16-19, there is no "material to be processed" implicitly or explicitly required by any claim, thus it is deemed to be an optional material. Since Ishida does not have this optional material, the claims fail to define over Ishida.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 14-15, 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida.

Claims 14-15 do not recite where/when the flow rate exists. It would have been obvious to flow the gas to burner at whatever speed is necessary to supply the sufficient mass of gas - and the diameter of the supply tube. That is, since given a mass flow rate, the velocity of the gas would inversely proportional to the square of the diameter of the tube carrying a gas. Thus if one has a small diameter tube supplying the oxygen, one would need a high velocity, compared to when using a large diameter tube. Whether or not there is any criticality (or new and unexpected result) associated with the velocity at a particular stage in the process is not relevant because the claim encompasses the velocity(s) at any time/stage.

See the discussion above for claims 18-19.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-15 and 18-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language "flow rate is 80 to 300" is indefinite as to what it means. It could mean literally: flow rate = 80 to 300 m/s – that is the flow rate starts at 80 m/s and increases to 300 m/s. Or that there is exactly one flow rate (and no others) and it is between 80 and 300 m/s; the use of "whose" being suggestive of exactly one rate. That the gas never has a rate less than 80 and never goes faster than 300. Or that there is a flow rate that is at least 80 and no more than 300 m/s. There could be other interpretations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim, Matsuda, Lucas, Hail, Van Geelen and Ruppert are cited as being of general interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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